 COPY #2

COST ANALYSIS

for

CENTRAL PROCESSING CENTER (CPC)

1987 J (A)

24 July 1964

Reference: Letter Contract AF33(657)-12843

The contents hereof are submitted in response to SPO Request for Proposal on E-C Portion of GDR dated 23 March 1964 signed [redacted] STAT

This contractor's proposal is offered firm for Government acceptance through the period ending 30 September 1964.

[redacted] STAT

Treasurer

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GENERAL CONSIDERATIONS

A - Factors Attendant To The Submittal Of A Cost Type Proposal

The Cost Analysis (Proposal) submitted herewith contemplates the definitization of a Cost Type Contract. This contractor offers for Contracting Agency evaluation the following factors which make it essential that a Cost Type Contract be considered:

1. The Mobile Processing Center (MPC) which to a great extent serves as the basis for development and fabrication of the Central Processing Center, has not progressed to the point where CPC manufacturing cost can be ascertained with the degree of accuracy normally associated with Fixed Price Type contracting - it is to be noted that the MPC has progressed only to the point of component assembly and test as of the time of this proposal submittal and significant tasks lie ahead, e.g. final van assembly, systems and marriage testing, integration and testing of the MDRDE equipment. Until such time as the aforementioned milestones have either been completed or progressed to a reasonable stage of completion the CPC configuration, and attendant cost, must remain unknown to some extent.
2. Software requirement (Item 8 of RFP) is largely developmental and, to this contractor's viewpoint, normally associated with Cost Type contracting - the analytical

basis upon which programs are derived are sometimes found to be not entirely valid due primarily to the size and complexity of the programming effort. The "debugging" process can be a very complex and tedious operation when there are large and complex programs involved as is the case under the CPC effort.

3. There exists a high degree of dependence on EMR System performance wherein incompatibilities could arise which would have an adverse affect on program costs - although conjectural at this time it is likely that configuration changes in the EMR equipment which could come about during environmental testing, mock-up testing at ADP or flight testing could result in configuration changes, and attendant cost expenditures, to the CPC.

4. Overall sub-contractor efforts have not reached a point where Fixed Price Procurements can be definitized - e.g. AMPEX Corp., supplier of the Wide Band Recorder equipments (Airborne and Ground) which forms an integral part of the Central Processing Center, will not at present enter into contract for follow-on units on other than a cost basis, and no firm quotation of any kind has been obtained from AMPEX for follow-on Wide Band Recorders at the time of this proposal submission.

B - This contractor's Cost Proposal and attendant scheduling as reflected under Section "D" hereof, has been compiled on the basis that total cumulative expenditures under Contracts AF33(657)-12278, -12843, and

-12846 will not exceed $51,000,000. through the period ending 30 June 1965 (end of FY 65 period). The aforementioned limitation is acknowledged with the understanding that deliveries of prime equipment will be accomplished expediently, wherever possible in accordance with the specific periodic requirements set forth in the follow-on EMR and CPC Request For Proposal(s), with limited extensions to the RFP dates being tolerated in difficult circumstances.

NOTE: The above $51,000,000. is to be recognized strictly as an expenditure limitation and is exclusive of $8,550,000. in commitments which this contractor will be obligated for as of 30 June 1965 and for which coverage will be required.

C - This contractor offers the following comment re. the terms and conditions for Cost Type contracts set forth under the RFP:

(a) "Authorization and Consent" - it is requested that ASPR 9-102.2 be substituted for 9-102.1 (7-203.23).

(b) "Patent Indemnity" (7-204.5) - contractor's proposal is contingent upon deletion of this clause in its entirety.

(c) All other clauses for Cost Reimbursement Type Supply Contracts are acceptable in all respects.

D - This contractor's quotation has been compiled on the basis that equipment delivered shall be accomplished FOB destination, said destination presumed to be the furthest possible continental U. S. A. site served by commercial air carrier.

Item #1

Description: Central Processing Center (CPC) - assembly, fabrication, installation and check-out thereof

Considerations:

1. The Central Processing Center shall conform to the equipment parameters and performance objectives set forth under this contractor's document No. 1916-SPS-21 entitled "System Specification, Central Processing Center, Electronic Data Processing System", Rev. ~~A~~ B, dated ~~11 May~~ 4 Oct, 1964. This contractor does not contemplate making further revisions to this document.

It is possible that product improvement items and/or special study proposals will be submitted subsequent to contract definitization in which case this contractor will offer same within the ECP framework.

2. It is submitted that 15 ~~January~~ Feb 1965 (delivery date of MPC van complex from this contractor's facility) be established as the design freeze date for the purpose of ECP submittals. Presuming changes will primarily involve areas of incompatibility with the governing document (1916-SPS-21) and will not be of the "make-operable" type which are understood to be this contractor's responsibility, it is this contractor's desire that changes prior to 15 ~~January~~ Feb 1965 be handled strictly on an internal control basis. OK Changes subsequent to 15 ~~January~~ Feb 1965, said changes including but not limited to those resulting from Cat. I testing, MPC-MDRDE interface, etc., will be incorporated into the Central Processing Center in accordance with the Engineering Change Proposal (ECP) procedure cited under Item #5 of the CPC Statement-of-Work.

3. This contractor submits the following cooperative schedule which has been reflected in the Cost Proposal offered hereunder and upon which manpower and overall planning has been premised:

(a) 1 January 1965 - Initial items of this contractor's E-C equipment will be delivered to OPS site facility (bldg.) for installation.

(b) 1 ~~March~~ July 1965 - 1st MDRDE equipment to be available at Flight Test site for installation in MPC.

(c) 31 July 1965 - Flash reporting capability demonstrated at CPC. Equipment responsibility (E-C portion) to be accepted by Government.

NOTE: This contractor's maintenance contract with CDC for the 1st 3200 Computer expires at this point and will presumably be carried forward by the Government.

(d) 15 ~~September~~ Oct 1965 - 2nd MDRDE equipment to be available at OPS site for installation in CPC. Facility turned over in operational condition to contractor for incorporation and check-out of equipments necessary for total processing capability.

(e) 31 December 1965 - Demonstration of total processing capability. This contractor's presently existing contracting obligations complete, including maintenance services for 3200 Computers, and using activity personnel assume complete cognizance of facility insofar as E-C portions are concerned.

4. This contractor's proposal does not provide for conducting any environmental testing under Contract AF33(657)-12843.

Item #2

Description: Spare Parts for Item 1 (CPC)

Considerations:

1. Basically this contractor's proposal presents Work Statement Item 2 in two (2) parts, specifically:

(a) The cost for preparing provisioning documentation which shall be defined as the procedures, terms and conditions governing quantitative determinations of the spares to support Item 1 of Contract, said costs having been included firm as proposed here under, and

(b) The budgetary cost for acquisition of items recommended and approved pursuant to (a) above, said cost having been included as proposed item 2(b) under a category defined as "Recommended Reserve For Undefined Areas".

2. With relation to 1(a) above, documentation shall be compiled in accordance with the instructions set forth under Exhibit "E" of the RFP taking exception to areas wherein specific definition in the nature of redirection and/or clarification was given this contractor during the 8-9 June Provisioning Guidance Meeting.

3. Further in connection with 1(a) it is recognized that this contractor's obligation for updating the Spares Provisioning List shall be fulfilled at such time as the Central Processing Center has been accepted by the Government - herein proposed to be 31 December 1965.

4. With relation to 1(b) above the recommended budgetary reserve is intended to support the Central Processing Center for a period of one (1) year commencing 31 July 1965 (date of demonstrating flash reporting capability) - depletion allowances beyond this point have not been considered hereunder.

5. In addition to acquiring maintenance services from CDC (item 1), this contractor will provide Provisioning Documentation under this item (2) and presumably spares (under budgetary item 2(a)) for the two (2) 3200 Computers utilized in the CPC. It is to be recognized this is not the usual procedure inasmuch as spares are ordinarily provided under a service contract. However, the fact that neither this contractor's representatives nor CDC personnel will be permitted in the CPC for maintenance purposes during critical times necessitates the requirement for the acquisition of the spare parts.

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Item #3

Description: Support Equipment - Contracting Agency provided

Considerations:

Support equipment will be provided by the procuring agency.

In the event the contractor is directed to provide any or all of the support items as Contractor Furnished Equipment (CFE) same will be incorporated pursuant to the Aerospace Ground Equipment (AGE) procedure cited under Exhibit "D" of the Request For Proposal.

Item #4

Description: Spare Parts for Item #3 (Support Equipment)

Considerations:

Spare parts for the support equipment will be provided by the procuring agency.

In the event this contractor is directed to provide spare parts for the support equipment same will be incorporated pursuant to the Spare Parts Provisioning procedure cited under Exhibit "E" of the Request For Proposal.

Item #5

Description: Engineering Changes (ECP's) - preparation thereof

Considerations:

1. Basically this contractor's proposal present Work Statement Item 5 in two (2) parts, specifically:

(a) Cost attendant to the preliminary investigation associated with either an Engineering Study or Engineering Change Proposal. This preliminary investigation will resolve definition of the approach that is to be taken and related cost. It will in effect constitute the equivalent of a Technical Proposal sufficient to allow complete Contracting Agency evaluation and subsequent entry into negotiation in the event it is resolved that same should be incorporated as an obligation under Contract. These preliminary investigation costs only have been included under Item 5(a), and

(b) Budgetary cost for the accomplishment of Engineering Changes or Special Studies resulting from (a) above, said budgetary cost having been included as proposed Item 5(b) under a category defined as "Recommended Reserve For Undefined Areas".

Item #6

Description: Engineering Data - Handbooks, Drawings, Mo. Progress Reports and Parts Consumption Records

Considerations:

1. Handbooks

(a) The CPC Handbook material will contain the following:

Vol. I - Overall CPC System

Vol. IIA - Operation & Maintenance for Digital Formatter

Vol. IIB - Operation & Maintenance for Analog Monitor

Vol. IIC - Operation & Maintenance for H Data Formatter

Vol. IID - Computer Program Description

Vol. IIE - Program Operating Instructions

Vol. III - Commercial Handbooks

(b) Good Commercial Practice (all material)

(c) Handbook material from MPC effort will be used to the fullest extent.

(d) Handbook contents will be delivered in two (2) separate submissions (preliminary and final documents) for both the Equipment (hardware) and Programming (software) efforts.

NOTE: Final handbook will be an updating and completion of the preliminary handbook - no continuous updating will be provided.

(e) No exploded view illustrations, IPB's, or Federal Stock Catalog references will be provided.

2. Drawings: The proposal submitted hereunder reflects the delivery of one (1) ea. sets of reproducible and reproduction type copies.

3. Progress Reports: The proposal submitted hereunder reflects the submission of Monthly Fiscal and Technical Progress Reports only.

4. Parts Consumption List(s): Said information will be compiled by this contractor (in the form of Malfunction Analysis Reports) until such time as total processing capability will have been demonstrated. It is to be recognized however that there will probably be instances when this contractor's personnel will not be in direct contact with the equipment and during such times there is a distinct possibility that record keeping could be interrupted.

part of reliability program. no additional effort.

Item #7

Description: Training - Materials and Services

Considerations:

1. Courses to be provided:

   (a) CPC Equipment Maintenance Course

   (b) CPC Programming Course

   (c) CPC Operator Training Course

   (d) CPC Data Analyst Training Course

2. In the interest of minimizing preparation costs, training material and instructions from the Cat. II MPC Training Course will be utilized to the fullest extent. It is to be noted that changes in overall program planning which necessitate changes to the aforementioned procedure could result in additional program cost.

3. Training will be given on-site at the operating location and use of the CPC for training purposes is assumed. CPC Equipment Maintenance Course and CPC Operator Training Course will require use of CDC 3200 Computer time. Availability of this time is assumed. No rental costs are included in these estimates for this computer item.

4. This contractor's proposal provides for all training materials and training aids such as viewgraphs, slides and film strips, but does not include costs for an actual training system or simulator.

5. Schedule completion of the first set of courses will approximately coincide with the start of the operational program.

6. Classrooms and facilities (blackboards, projectors, etc.) at the training site are assumed. No costs are included in these estimates for such items.

7. Minimum class sizes of 8-10 students is assumed for all courses requiring equipment time.

8. Student prerequisites remain to be determined. However, student levels are assumed to be in accordance with job descriptions as indicated in EMR and GDR Training Plan (1912-R-15) dated 1 April 1964.

Item #8

Description: Full ELINT Processing - compatibility with Finder Library

Considerations:

The Using Activity shall furnish adequate time on the Advanced Finder System (1604A computer, special purpose computer, and computer programs as required) to permit check-out of the interface with the CPC output.

The Using Activity shall, at this contractor's request, supply the necessary Advanced Finder System operators and provide assistance in the analysis and interpretation of the test results.

Schedules for usage of the Advanced Finder System shall be mutually agreed to by the Using Activity and contractor and further coordinated with the System Program Office (SPO).

Item #9

Description: Integration Responsibility - coordination with GDR contractor

Considerations:

Cost for coordination and liaison with the Ground Data Reduction (GDR) contractor, has been estimated on the basis of that being experienced under Contract AF33(657)-12278.

Item #10

Description: Procurement of Rental Computer utilized in Mobile Processing Center (MPC)

Considerations:

Item reflects acquisition of ruggedized (MPC) 3200 Computer from Control Data Corporation on a "buy" basis rather than a "rental" basis.

NOTE: This contractor's maintenance contract with CDC for the 3200 Computer utilized in the MPC expires ~~on 30 June 1965~~ upon completion of CAFT testing and will presumably be carried forward from this date by the Government.

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Item #11

Description: Mission Planning Study

Considerations:

Above item entered into Work Statement pursuant to SPO letter dated 15 April 1964 - subject: Mission Planning.

This contractor's proposal reflects compliance with the authority and direction set forth under the aforementioned correspondence.

will get actuals

Item #12

Description: Special Tooling, Facilities and Equipment - Field Shop and Contractor's Facility

Considerations:

Above item, entered into Work St[illegible]ment pursuant to 27 May 1964 telecon between SPO and contractor personnel, is defined as follows:

> Special tooling, facilities or equipment required to provide a repair capability for CPC items through the lowest level of field replaceable elements at the operating location. Equipment and tooling used in manufacture of the CPC items shall be utilized to the fullest extent.

SUMMARY COST ANALYSIS

(a) Presently Defined Items

Item #	Quantity	Description	Cost
1	1	Central Processing Center (CPC)	$ 6,339,326.
2(a)	Lot	Spare Parts Provisioning for Item 1	467,966.
3	---	Support Equip.-Contracting Agency Provided	
4	---	Spare Parts for Item 3-Contracting Agency Provided	
5(a)	Lot	Eng. Chg. Prop.-Prep. Documentation	112,840.
6	Lot	Engineering Data	132,239.
7	Lot	Training	154,273.
8	Lot	Full ELINT Processing	872,667.
9	7 Man Mos.	Integration Coordination	16,678.
10	1	Computer for MPC	1,293,790.
11	54 Man Mos.	Mission Planning Study	176,962.
12	Lot	Spec. Tooling, Facilities & Equip.	191,123.
		Total Estimated Cost Including Fixed Fee	$ 9,757,864.

(b) Recommended Reserve for Undefined Areas - Budgetary

Proposed Item #	Quantity	Description	Cost
2(b)	Lot	Spare Parts for Item 1 (CPC)	$ 700,000.
5(b)	Lot	Prosecution of Engineering Chg.	300,000.
		Total Estimated Cost Including Fixed Fee - Budgetary	$ 1,000,000.

[redacted]

ANALYSIS

FILE: 1987 J(A)
DATE: 20 July 1964

ITEM NO: Summary - CPC
PR NO:
CONTRACT: 1987J(A)
DESCRIPTION OF ITEM:

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	56,872	161,014	35,887	196,901
ENGINEERING	139,620	836,901	12,085	848,986
TECHNICIANS	34,438	121,332	3,091	124,423
PUBLICATIONS	8,735	33,746		33,746
DESIGN AND DRAFTING	7,712	29,199		29,199
SHOP	11,348	1,126	34,722	35,848
ELECTRICAL ASSEMBLY	27,113		78,214	78,214
INSPECTION	7,815		24,737	24,737
SPARES DATA PREPARATION	3,813		15,324	15,324
PACKAGING AND SHIPPING	1,216		3,588	3,588
FIELD ENGINEERING	298,682	$4.65?		
(1) TOTAL DIRECT LABOR		1,183,318	207,648	$ 1,390,966

OVERHEAD: 105% OF DIRECT LABOR CLASS (A) $ 1,242,485
82.5% OF DIRECT LABOR CLASS (B) $ 171,308

(2) TOTAL OVERHEAD $ 1,413,793

RAW MATERIAL AND PURCHASED PARTS	300,102
SUBCONTRACTING	4,896,162
TRAVEL AND SUBSISTENCE	120,760
OVERTIME PREMIUM	26,124
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	141,665

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 5,484,813

(4) TOTAL OF (1) AND (2) AND (3) $ 8,289,572

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5 % OF (4) $ 787,510

(6) ESTIMATED COST, (4) + (5) $ 9,077,082

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 680,782

GRAND TOTAL, (6) + (7) $ 9,757,864

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ANALYSIS

FILE: 1987J(A)
DATE: 20 July 1964

ITEM NO: 1
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: CPC

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	43,585	130,542	29,322	159,864
ENGINEERING	64,268	392,177	11,883	404,060
TECHNICIANS	9,997	36,647	2,991	39,638
PUBLICATIONS	420	1,911		1,911
DESIGN AND DRAFTING	4,826	17,903		17,903
SHOP	9,446	1,126	28,714	29,840
ELECTRICAL ASSEMBLY	24,385		69,465	69,465
INSPECTION	7,070		22,239	22,239
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING	1,152		3,388	3,388
FIELD ENGINEERING	165,149	4.53		
(1) TOTAL DIRECT LABOR		580,306	168,002	$ 748,308

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 609,321
82.5 % OF DIRECT LABOR CLASS (B) $ 138,602

(2) TOTAL OVERHEAD $ 747,923

RAW MATERIAL AND PURCHASED PARTS	262,291
SUBCONTRACTING	3,465,301
TRAVEL AND SUBSISTENCE	73,037
OVERTIME PREMIUM	18,701
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	69,870

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 3,889,200

(4) TOTAL OF (1) AND (2) AND (3) $ 5,385,431

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 511,616

(6) ESTIMATED COST, (4) + (5) $ 5,897,047

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 442,279

GRAND TOTAL, (6) + (7) $ 6,339,326

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ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 2
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: CPC Spares Provisioning

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	1,764	5,431	908	6,339
ENGINEERING	880	5,109		5,109
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY	218		957	957
INSPECTION	53		220	220
SPARES DATA PREPARATION	3,813		15,324	15,324
PACKAGING AND SHIPPING	10		31	31
FIELD ENGINEERING	6,738	4.15		
(1) TOTAL DIRECT LABOR		10,540	17,440	$ 27,980

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 11,067
82.5 % OF DIRECT LABOR CLASS (B) $ 14,387

(2) TOTAL OVERHEAD $ 25,454

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	331,750
TRAVEL AND SUBSISTENCE	6,104
OVERTIME PREMIUM	1,876
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	4,386

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 344,116

(4) TOTAL OF (1) AND (2) AND (3) $ 397,550

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5 % OF (4) $ 37,767

(6) ESTIMATED COST, (4) + (5) $ 435,317

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 32,649

GRAND TOTAL, (6) + (7) $ 467,966

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ANALYSIS

FILE: 1987 J(A)
DATE: 20 July 1964

ITEM NO: 5
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: ECP's

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING	6,600	46,761		46,761
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	6,600	1.085		
(1) TOTAL DIRECT LABOR		46,761		$ 46,761

OVERHEAD: 105% % OF DIRECT LABOR CLASS (A) $ 49,099
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 49,099

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ 95,860

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 9,107

(6) ESTIMATED COST, (4) + (5) $ 104,967

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 7,873

GRAND TOTAL, (6) + (7) $ 112,840

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 6
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: DATA

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	680	1,605		1,605
ENGINEERING	3,432	19,244		19,244
TECHNICIANS	760	2,777		2,777
PUBLICATIONS	7,415	29,711		29,711
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	12,287	4,134		
(1) TOTAL DIRECT LABOR		53,337		$ 53,337

OVERHEAD: 105% OF DIRECT LABOR CLASS (A) $ 56,004
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 56,004

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES 3,000

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 3,000

(4) TOTAL OF (1) AND (2) AND (3) $ 112,341

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 10,672

(6) ESTIMATED COST, (4) + (5) $ 123,013

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 9,226

GRAND TOTAL, (6) + (7) $ 132,239

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no material

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 7 PR NO:
CONTRACT: 1987J (A)
DESCRIPTION OF ITEM: Training

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	800	2,992		2,992
ENGINEERING 4 Instructors	8,624	45,465		45,465
TECHNICIANS				
PUBLICATIONS	900	2,124		2,124
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	10324	4.90		
(1) TOTAL DIRECT LABOR		50,581		$ 50,581

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 53,110
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 53,110

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	27,368

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 27,368

(4) TOTAL OF (1) AND (2) AND (3) $ 131,059

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5 % OF (4) $ 12,451

(6) ESTIMATED COST, (4) + (5) $ 143,510

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 10,763

GRAND TOTAL, (6) + (7) $ 154,273

What is this?

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 8 PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: Total Processing

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	6,535	14,744		14,744
ENGINEERING	41,585	236,055		236,055
TECHNICIANS	22,588	78,005		78,005
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	70,708	4.65		
(1) TOTAL DIRECT LABOR		328,804		$ 328,804

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 345,245
% OF DIRECT LABOR CLASS (B) $

(2) TOTAL OVERHEAD $ 345,245

RAW MATERIAL AND PURCHASED PARTS	13,901	
SUBCONTRACTING		
TRAVEL AND SUBSISTENCE	14,826	
OVERTIME PREMIUM	4,135	
PACKAGING AND SHIPPING		
OTHER DIRECT CHARGES	34,443	
(3) DIRECT CHARGES (OTHER THAN LABOR)		$ 67,305
(4) TOTAL OF (1) AND (2) AND (3)		$ 741,354
(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4)		$ 70,429
(6) ESTIMATED COST, (4) + (5)		$ 811,783
(7) PLANNED PROFIT OR FEE 7.5% OF ESTIMATED COST, (6)		$ 60,884
GRAND TOTAL, (6) + (7)		$ 872,667

What is this?

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 9
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: Integration Coordination

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING	1140	6,911		6,911
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	1140	6.06		
(1) TOTAL DIRECT LABOR		6,911		$ 6,911

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 7,257
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 7,257

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ 14,168

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 1,346

(6) ESTIMATED COST, (4) + (5) $ 15,514

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 1,164

GRAND TOTAL, (6) + (7) $ 16,678

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 10 PR NO: CONTRACT: 1987 J(A)

DESCRIPTION OF ITEM: Procurement of MPC Computer

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $_____

% OF DIRECT LABOR CLASS (B) $_____

(2) TOTAL OVERHEAD $_____

RAW MATERIAL AND PURCHASED PARTS	1,099,111
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 1,099,111

(4) TOTAL OF (1) AND (2) AND (3) $ 1,099,111

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5 % OF (4) $ 104,415

(6) ESTIMATED COST, (4) + (5) $ 1,203,526

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 90,264

GRAND TOTAL, (6) + (7) $ 1,293,790

$33,000 Thru 9/64

ANALYSIS

FILE: 1987 J(A)

DATE: July 20, 1964

ITEM NO: 11

PR NO:

CONTRACT: 1987 J(A)

DESCRIPTION OF ITEM: Mission Planning

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING	8,640	60,264		60,264
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	8,640	6,975		
(1) TOTAL DIRECT LABOR		60,264		$ 60,264

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 63,277

% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 63,277

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	26,793
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 26,793

(4) TOTAL OF (1) AND (2) AND (3) $ 150,334

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 14,282

(6) ESTIMATED COST, (4) + (5) $ 164,616

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 12,346

GRAND TOTAL, (6) + (7) $ 176,962

Dept.

ANALYSIS

FILE: 1987 J(A)
DATE: July 20, 1964

ITEM NO: 12
PR NO:
CONTRACT: 1987 J(A)
DESCRIPTION OF ITEM: CPC Field Shop Equipment

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	3,508	5,700	5,657	11,357
ENGINEERING	4,451	24,915	202	25,117
TECHNICIANS	1,093	3,903	100	4,003
PUBLICATIONS				
DESIGN AND DRAFTING	2,886	11,296		11,296
SHOP	1,902		6,008	6,008
ELECTRICAL ASSEMBLY	2,510		7,792	7,792
INSPECTION	692		2,278	2,278
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING	54		169	169
FIELD ENGINEERING	17,096	3.98		
(1) TOTAL DIRECT LABOR		45,814	22,206	$ 68,020

OVERHEAD: 105 % OF DIRECT LABOR CLASS (A) $ 48,105
82.5 % OF DIRECT LABOR CLASS (B) $ 18,319

(2) TOTAL OVERHEAD $ 66,424

RAW MATERIAL AND PURCHASED PARTS	~~23,910~~
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	
OVERTIME PREMIUM	1,412
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	2,598

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 27,920

(4) TOTAL OF (1) AND (2) AND (3) $ 162,364

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.5% OF (4) $ 15,425

(6) ESTIMATED COST, (4) + (5) $ 177,789

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 13,334

GRAND TOTAL, (6) + (7) $ 191,123

SCHEDULE OF FISCAL YEAR EXPENDITURES *

(a) Presently Defined Items

Item #	Description	FY 64	FY 65	FY 66	FY 67	TOTAL
1	Central Processing Ctr.	.147	4.286	1.806	.100	6.339
2(a)	Spare Parts Prov. for Item 1	.001	.069	.398		.468
3	Support Equip.- Contr. Agency Prov.					
4	Spare Parts for Item 3 Contr. Agency Prov.					
5(a)	Eng. Chg. Prop.- Prep. Documentation		.113			.113
6	Engineering Data	.001	.095	.036		.132
7	Training		.025	.129		.154
8	Full ELINT Processing	.005	.631	.237		.873
9	Integration Coordination		.013	.004		.017
10	Computer for MPC		1.294			1.294
11	Mission Planning Study	.007	.112	.058		.177
12	Spec. Tooling, Facility & Equipment		.165	.026		.191
	Incremental Totals	.161	6.803	2.694	.100	9.758

(b) Recommended Reserve for Undefined Areas - Budgetary

Proposed Item #	Description	FY 64	FY 65	FY 66	FY 67	TOTAL
2(b)	Spare Parts for Item 1 (CPC)		.100	.500	.100	.700
5(b)	Prosecution of Engr. Chgs.		.100	.200		.300
	Incremental Totals		.200	.700	.100	1.000
	Program Totals	.161	7.003	3.394	.200	10.758

* Contractor Fee Included in Above Increments

SCHEDULE OF FISCAL YEAR COMMITMENTS *

(a) Presently Defined Items

Item #	Description	FY 64	FY 65	FY 66	FY 67	TOTAL
1	Central Processing Ctr.	3.214	2.672	.453		6.339
2(a)	Spare Parts Prov. for Item 1	.001	.460	.007		.468
3	Support Equip.- Contr. Agency Prov.					
4	Spare Parts for Item 3 Contr. Agency Prov.					
5(a)	Eng. Chg. Prop.- Prep. Documentation		.113			.113
6	Engineering Data	.001	.096	.035		.132
7	Training		.025	.129		.154
8	Full ELINT Processing	.005	.631	.237		.873
9	Integration Coordination		.013	.004		.017
10	Computer for MPC	1.229	.065			1.294
11	Mission Planning Study	.006	.118	.053		.177
12	Spec. Tooling, Facility & Equipment		.165	.026		.191
	Incremental Totals	4.456	4.358	.944		9.758

(b) Recommended Reserve for Undefined Areas - Budgetary

Proposed Item #	Description	FY 64	FY 65	FY 66	FY 67	TOTAL
2(b)	Spare Parts for Item 1 (CPC)		.500	.200		.700
5(b)	Prosecution of Engr. Chgs.		.100	.200		.300
	Incremental Totals		.600	.400		1.000
	Program Totals	4.456	4.958	1.344		10.758

* Contractor Fee Included in Above Increments

MAJOR SUBCONTRACTOR(S) LISTING * (CPC)

Purchase Order No.	Vendor	Value	Type	Description
	Undetermined (To be awarded on basis of competitive bids)	$ 12,000.	FP	Installation of Elevated Floor at CPC Site
	Undetermined (To be awarded on basis of competitive bids)	5,050.	FP	Labor, equip. and mat'l. for Installation of Power Panel & Cabling-CPC Site
	Undetermined (To be awarded on basis of competitive bids)	97,695.	FP	X-Y Plotter including Instruction Manuals and Service
	Electronic Associates, Inc.	46,330.	FP	X-Y Plotter (same as MPC) including Handbooks and Service
	Parsons	61,593.	FP	One (1) ea. N/B Ground Recorder/ Reproducer
	AMPEX	500,000.	CPFF	Two (2) ea. W/B Ground Recorder/ Reproducer
1914	CDC	2,721,896.	FP	Purchase of Computer Systems #3 & #4 and rental of System #1 plus maintenance and shipping charges for these computers
	Electronic Assoc., Inc. & Undetermined (same as above)	120,000.	FP	Spares Provisioning for X-Y Plotters
	Fabri-Tek	78,000.	FP	Spares Provisioning for Core Buffers

Purchase Order No.	Vendor	Value	Type	Description
	AMPEX	$ 105,000.	FP	Spares Provisioning for W/B Ground Recorder/Reproducer
1914	CDC	1,099.111.	FP	Purchase of Computer System #2 plus maintenance

* General Criteria (a) Non-Competitive Fixed Price Procurements in excess of $50,000.
(b) Competitive Fixed Price Procurements in excess of $100,000.
(c) Cost Type Procurements in excess of $10,000.
(d) Facilities Type Procurements in excess of $1,000.
(e) Time & Material Procurements in excess of $1,000.

CERTIFICATE OF CURRENT PRICING DATA

This is to certify, to the best of my knowledge and belief, that in the preparation of the proposal for E-C Portion of GDR being (to be) produced under the terms of (contract, ~~proposal, quotation, etc.~~) No. AF33(657)-12843; (I) all actual or estimated costs or pricing data available as of 24 July 1964 (Date) have been considered in preparing the price estimate, and made known to the Contracting Officer or his representative for use in evaluating the estimate, and (II) any significant changes in the above data which have occurred since the aforementioned date through the ____ (Date) of ____ (Month) ____ (Year) also have been made known in the price negotiations to the Government negotiator.

Name W. H. Dobbins

Title Treasurer

Firm Airborne Instruments Laboratory
A Division of Cutler-Hammer, Inc.

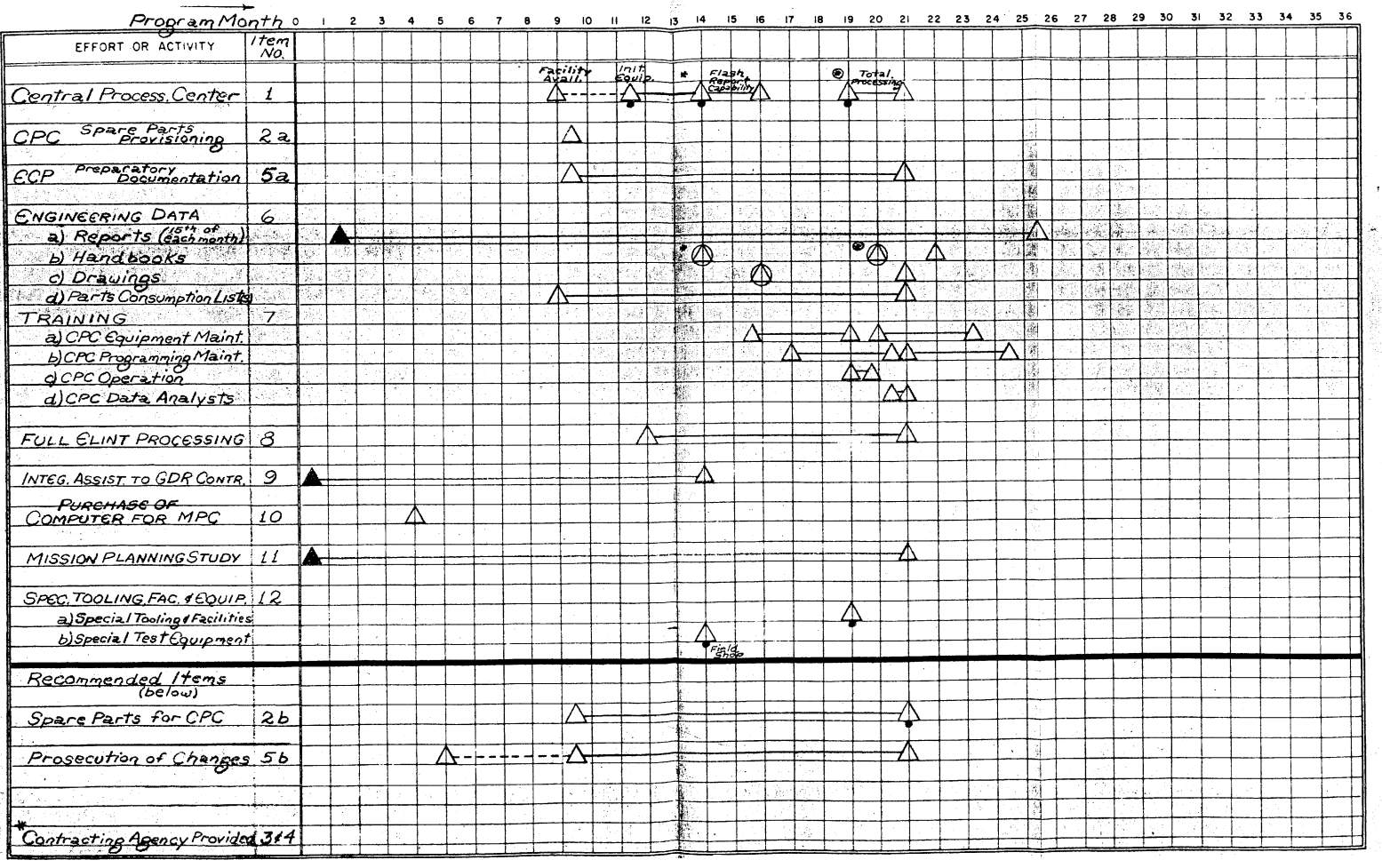
Date 24 July 1964

Note that 18 U.S.C. 1001 prescribes criminal penalties for making false representations to the Government.

ASPR 3-807.7
ASC Ltr 11 Mar 1960

PROGRAM 1987 MILESTONE SCHEDULE - CPC

Date: 20 July 1964



Spec-Contract no 7

FACILITIES

In the performance of Contract AF33(657)-12843 this contractor will require the use of the following facility furnished under Contract AF33(657)-12278 (DT & E phase):

Computer Room Facility

Note: This contractor's proposal is premised upon utilization of the above facility on a "no charge basis". In the event such use were to be denied, the proposal submitted herewith would be increased by approximately $35,000. insofar as the facility only is concerned. It is to be recognized significant additional cost and schedule extensions would also be incurred in the event the use of this facility were to be denied.

In addition to the above, this contractor will have a very nominal "new" facilities requirement for the follow-on systems effort, Contract AF33(657)-12843.

SPECIAL PRODUCTION TOOLING & TEST EQUIPMENT

Special Production Tooling:

A nominal amount of special production tooling for CPC equipment has been included under Item #1.

Special Test Equipment:

Under Item 12(a) this contractor has provided for a single set of test equipment to be used initially in-plant for the purpose of CPC equipment check-out prior to delivery and then forwarded to the Field Shop for maintenance purposes. It is to be noted that neither a duplicate set, nor any substantial amount of special test equipment, is being provided for a contractor depot facility. The aforementioned policy is deemed appropriate in that the nominal amount of in-plant maintenance which is anticipated does not warrant expending significant amounts for special test equipment.

GOVERNMENT PROPERTY

It is requested that the following items be provided this contractor on a "Government Furnished Equipment" (GFE) basis, said items to be used within this contractor's facility for test and check-out of CPC equipment(s) being delivered under Contract AF33(657)-12843. It is to be noted said items represent costs of approximately $20,000. which will be incurred, and have not been compiled in the proposal submitted hereunder, if this contractor is to acquire the equipment on an open procurement basis.

Qty.	Description	Cost (*)
3	Oscilloscope, Tektronix 545A	$ 1,550.
1	Oscilloscope, Tektronix 543A	1,300.
1	Oscilloscope, Tektronix 515A	875.
5	Plug-In Head, Tektronix Type CA	260.
2	Plug-In Head, Tektronix Type M	525.
10	Oscilloscope, Probe, Tektronix P6027	13.
3	Scope Cart, Type 500/53A	110.
1	Scope Cart, Type 204	100.
~~1~~	~~Scope Cart, Mod. 201~~	~~185.~~
~~1~~	~~Pulse Generator, Data Pulse Mod. 200M~~	~~3,710.~~
~~2~~	~~Pulse Generator Head, Data Pulse P901~~	~~570.~~
1	Pulse Generator SQ Output, GASL Model PSG-1	690.
1	Oscillator, Hewlett Packard 650A	550.
2	VTVM, RCA WV98A	80.
3	Multimeter, Triplett 630	60.

(*) Approx. unit acquisition cost which does not include attendant contractor labor and G & A expenses.

Encl To
EAR-0399
COPY 1 OF 1

In hip pocket

15 May 1964

Attention: Messrs. [redacted] STAT

Dear Temp:

Pursuant to recent discussions between SPO personnel and this contractor's representatives [redacted], this contractor is pleased to forward one (1) copy (#3) of Proposal J-1935, "Maintenance Data Processing With The DPOD/SDS 910". STAT STAT

This contractor trusts the technical information and attendant budgetary cost will prove suitable for the purpose intended. Please be advised this contractor's representatives are available for further discussions concerning the proposal submitted herewith.

Best Regards,

[redacted] STAT

MOD/JM/vr

cc: Frank Harris (w/enc. Cy. #4) ← THIS COPY FOR

Copy #4

MAINTENANCE DATA PROCESSING WITH THE DPOD/SDS-910

13 May 1964

Prepared by: [redacted] STAT

Approved by: [redacted]

Approved by: [redacted]

EXHIBIT A

to

J-1935

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

FIGURE

MAINTENANCE DATA PROCESSING WITH THE DPOD/SDS-910

SECTION I
INTRODUCTION

This proposal is submitted in response to a verbal request regarding the feasibility of using the DPOD/SDS-910 system to process maintenance data. The system was studied to determine (1) what is the turn-around analysis processing time with the DPOD/910 system essentially as is, and (2) what additional facilities are required to meet the 20-minute turn-around analysis processing requirement.

SECTION II

SUMMARY

The DPOD/SDS-910, in conjunction with the Maintenance Data Reproducing and Digitizing Equipment (MDRDE) and with the addition of certain required interface equipment, can be used to perform turn-around and trend analysis maintence data processing.

A timing estimate of the turn-around analysis with the basic system, and with no additions to the computer, indicated the first reports will be produced in 15-1/2 minutes and the fourteenth report in 42 minutes. With the addition of two 4K memory modules to the computer, to allow the use of look-up tables rather than the slower arithmetic operations, the first three reports can be preduced within 17-1/4 minutes, the next three in 4 additional minutes, and the last reports will be completed in 32 minutes.

It is felt that no timing or costing estimates should be made for the trend analysis processing at this time until the operations become better defined.

Facilities are included for checking the data and transmitting it to the CPC in parallel with the DPOD.

SECTION III

SYSTEM DESCRIPTION

A. BASIS OF APPROACH

The proposal is based upon the following ground rules:

1. The vehicle monitor data tapes will be reproduced, digitized, and formatted by means of a Maintenance Data Reproducing and Digitizing Equipment (MDRDE) identical to that being supplied to the MPC and CPC.
2. Playback will be at 80 times recorded speed.
3. There will be two vehicle monitor data tapes, played back one at a time.
4. Maintenance data only will be processed by the DPOD.
5. All data will be transmitted simultaneously to the CPC.
6. This proposal includes only processing times for the turn-around analysis.
7. A coaxial cable data link to the CPC of up to 7 miles is assumed.

B. SYSTEM DESCRIPTION

1. General

The Maintenance Processing System (Figure 1) consists of (1) the Maintenance Data Reproducing and Digitizing Equipment (MDRDE) for reproducing and digitizing the analog parameters,

(2) the DPOD/SDS-910 for processing the data, (3) the data link transmitter and receiver, and (4) the respective interface equipments for each of the units.

2. Maintenance Data Reproducing and Digitizing Equipment, (MDRDE)

The MDRDE reproduces the vehicle monitor data tapes at 80 times recorded speed, samples and digitizes the analog parameters, and outputs the data in 7-bit (6-bit data and 1-bit parity) characters at a nominal 30 Kc character rate.

3. DPOD Interface

The function of the DPOD Interface (Figure 2) is to check the parity of each of the incoming 7-bit characters, detect data sync to assure that data is inputted to the computer in the proper format and sequence, strip off the maintenance data, and assemble the incoming 6-bit data characters into 24-bit computer words. Each of the analog parameters is digitized to 8 binary bits by the MDRDE. Therefore, four 6-bit characters assembled in the proper sequence into one 24-bit computer word comprises three 8-bit digitized parameters. Data will be inputted to the DPOD/SDS-910 under control of the necessary signals between the control logic and the DPOD/SDS-910.

4. DPOD/SDS-910

The DPOD consists of an AIL built Semi-Automatic Translator (SAT), an SDS built Special Purpose buffer (BBE-2), an SDS-910 Computer (with peripheral equipment), a Magnetic Tape Recorder, and High Speed Printer (Figure 3).

The SAT accepts digital data (serial or parallel) from a number of equipments in a number of formats. The data from the DPOD Interface is in the form of 24-bit words at a maximum word rate of 8000 words per second. This data is stored in SAT and presented to the BBE-2 buffer. Any differences in level, as well as synchronism of data to the BBE-2 buffer, are accomplished by SAT.

The BBE-2 buffer is a high speed input device which accepts a 24-bit word at a maximum of 125,000 words/second. The data must be synchronized to the BBE-2 buffer clock.

The BBE-2 buffer stores data in one of two 2048 word core storages. When either of these cores are full, the data is transferred to the 910 computer main frame at 125,000 words/second.

The 910 computer main frame accepts data from the BBE-2 and reformats for recording on a magnetic tape.

The magnetic tape is rewound and the computer put into a data analysis mode. During this mode the data is read from tape into the BBE-2 (which serves only for block storage); the 910 computer main frame reads this data in blocks of 2048 words and, after analysis is complete, controls the line printer input to obtain a printout of the data. The printout can be in octal, binary, decimal, or alphanumeric form.

5. Data Link Interface and Driver

The Data Link Interface and Driver (Figure 4) will receive its input consisting of a 7-bit data character and a sync and parity check pulse from the DPOD Interface. The data is complemented for a check of data transmission, and both the data and its complement are stored for transmission. These data are then converted from parallel to serial format and transmitted via the data link driver. The data and complement are then converted to a three level signal for transmission to eliminate the need of transmitting a clock pulse.

6. Data Link

The data link is assumed to be a coaxial cable capable of transmitting data up to a distance of one mile by direct connection of the data cable from the Transmitter to the Receiver. The transmission capabilities may be extended up to seven miles by adding repeated stations at one-mile intervals; if this is done, primary power must also be routed to the repeater stations along with the data. To compensate for the voltage drop along the length of the line, 220V AC 60 cps primary power would be transmitted and connected to an input step down transformer to transform the voltage back to 110V AC 60 cps. The data transmission cable will handle an 800 KC bit rate and is of the low-loss foam dielectric type to minimize attenuation and noise problems.

7. Receiver Interface and Error Detector (Figure 5)

The receiver interface receives the data and complement over a transmission line. This information is converted back to a two-level signal and a comparison is made between the data word and the complement word in a comparator to check the validity of the data. An error count is made to determine the number of errors in transmission. Should an error occur, that set of characters in which the error occurs is set to "0" in the output register. The number of errors is displayed so that a trouble-shooting phase can be implemented if a specific number of errors is exceeded.

The data are checked for synchronization to assure proper sequence, and are assembled in a 24-bit register for input to the Digital Formatter of the CPC equipment.

C. PROCESSING DESCRIPTION

The production of the Turn-around Report using the DPOD/SDS-910 is a three-pass operation. A description of the passes follows:

Pass 1: Play back the first A/B tape on the MDRDE, and produce a Computer Compatible Tape (CCT). For timing purposes, it has been assumed that the first A/B Tape has data from eight systems.

Pass 2: Play back the second A/B Tape on the MDRDE, and write the data on the CCT produced in Pass 1, after the data written in Pass 1. For timing purposes, it has been assumed that the second A/B tape has data from six systems.

Pass 3: The CCT written in Passes 1 and 2 is read and processed, and a Report is produced on the Line Printer. The report consists of one line for every 5 minutes of Mission Time. The format of the report is variable, containing plots of certain points, actual values of certain points, or go/no-go indications for certain points. Where actual values are either printed or plotted, the number shown will be either an extreme value, or the average value, over the 5-minute interval.

To save time, it is planned to store the conversion of Test-Point-encoded-value to actual-parameter-value in a series of tables. For this purpose, it is assumed that there will be 100 different types of data categories, and that each of the 630 Test Points will fall into one of the 100 categories.

Pass 3 is broken into five sub-passes. On each of these passes, data from three systems is processed. The data of one of the systems is printed, and that of the other two stored. While the tape is rewinding, the data of the other two systems is printed (on the third sub-pass, only the data of two of the systems is processed).

D. STORAGE REQUIREMENTS

The DPOD/SDS-910 Computer currently associated with the DPOD does not have enough storage to do the Maintenance Turn-around Report in the desired time. The minimum amount of core capacity required, including space for look-up tables and storage of the data from two systems, is 10,600 words. Two additional 4096 word memory modules are therefore required, giving a total memory of 12,288 words.

E. TIMING ESTIMATES

1. With additional two 4K memory modules to computer:

Passes 1 and 2:

The time required for Pass 1 and 2 will be just the time required to play back the A/B tape at an 80 to 1 ratio requiring 3-⅛ minutes for each pass.

Pass 3:

The timing estimate for Pass 3 is based on the assumption that the processing of the data requires the following numbers of operations:

a. Each datum, each pass through tape:

Unpack and sort 40 cycles. Indexing can be used so that only one-half of the words need be unpacked in each cycle.

b. Each Test Point:

Look up in Table: 60 cycles/sample x 6000 samples, 1/3 of the time = 120×10^3 cycles

Average: 2 cycles/word x 100 words/interval + 111 cycles (to perform a division) x 60 lines = 311 cycles/line x 60 lines = 19 x 10^3 cycles

Format: 600 cycles for one-quarter of the Points + 200 cycles for one-half of the Points + 50 cycles for one-quarter of the Points = 150 + 100 + 13 = 263 cycles Average/Point/line x 60 lines = 16 x 10^3 cycles.

Based on the above, the timing of the overall program with two 4K memory modules will be as shown in Table 1.

2. With the computer configuration as is, there is a timing change due to the following considerations:

a. Table look-up for decoding cannot be used. A second order polynominal equation is assumed as an average procedure.

b. Pass 3 will have to be made a 14-step operation, processing and printing one system at a time.

Total timing for SDS/910 Computer without extra memory will be as shown in Table II.

TABLE I

	FUNCTION	TIME Minutes	Seconds	TOTAL Minutes	Seconds
PASS 1	Set up	2			
	Run	3	30	5	30
PASS 2	Set up	2		7	
	Run	3	30	11	
PASS 3	Set up	2		13	
First 3 reports		4	5	17	5
Next 3 reports		4	5	21	10
Next 2 reports		2	55	24	5
Next 3 reports		3	56	28	1
Last 3 reports		3	56	31	57

TABLE II

	FUNCTION	TIME Minutes	TIME Seconds	TOTAL TIMES Minutes	TOTAL TIMES Seconds
PASS 1	Set Up	2			
	Run	3	30	5	30
PASS 2	Set Up	2			
	Run	3	30	11	
PASS 3	Set Up	2		13	
	1st Rep't	2	6	15	6
	2nd Rep't	2	6	17	12
	3rd Rep't	2	6	19	18
	4th Rep't	2	6	21	24
	5th Rep't	2	6	23	30
	6th Rep't	2	6	25	36
	7th Rep't	2	6	27	42
	8th Rep't	2	6	29	48
	9th Rep't	1	57	31	45
	10th Rep't	1	57	33	42
	11th Rep't	1	57	35	39
	12th Rep't	1	57	37	36
	13th Rep't	1	57	39	33
	14th Rep't	1	57	41	30

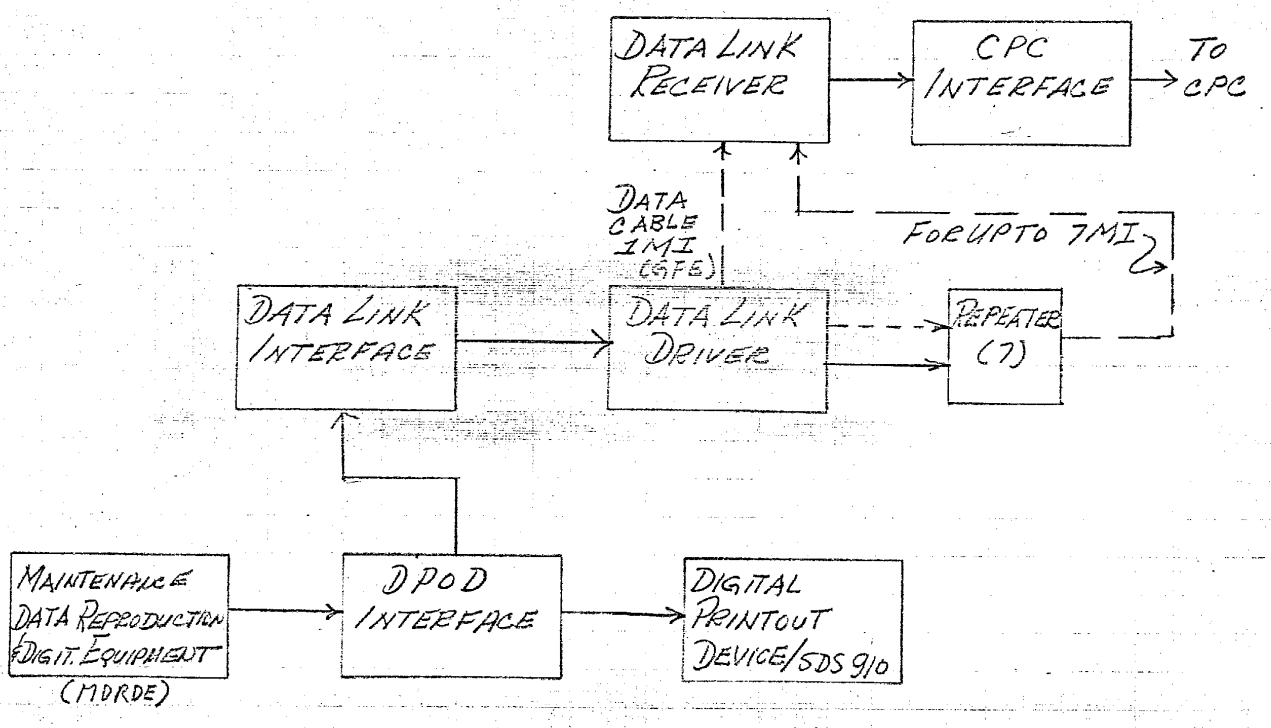


FIG #1
DPOD MAINTENANCE DATA PROCESSING SYSTEM

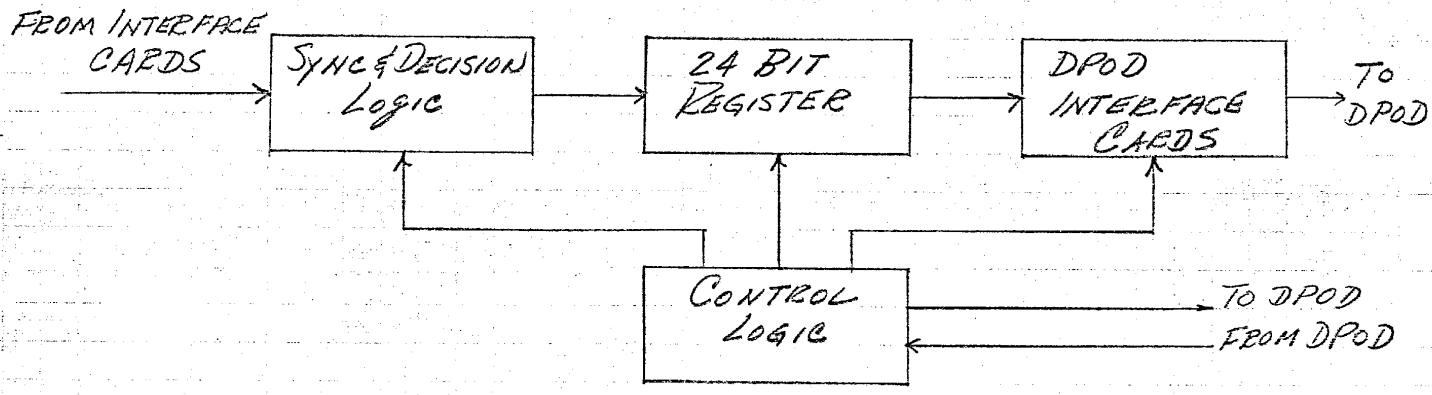


FIG #2
DPOD INTERFACE

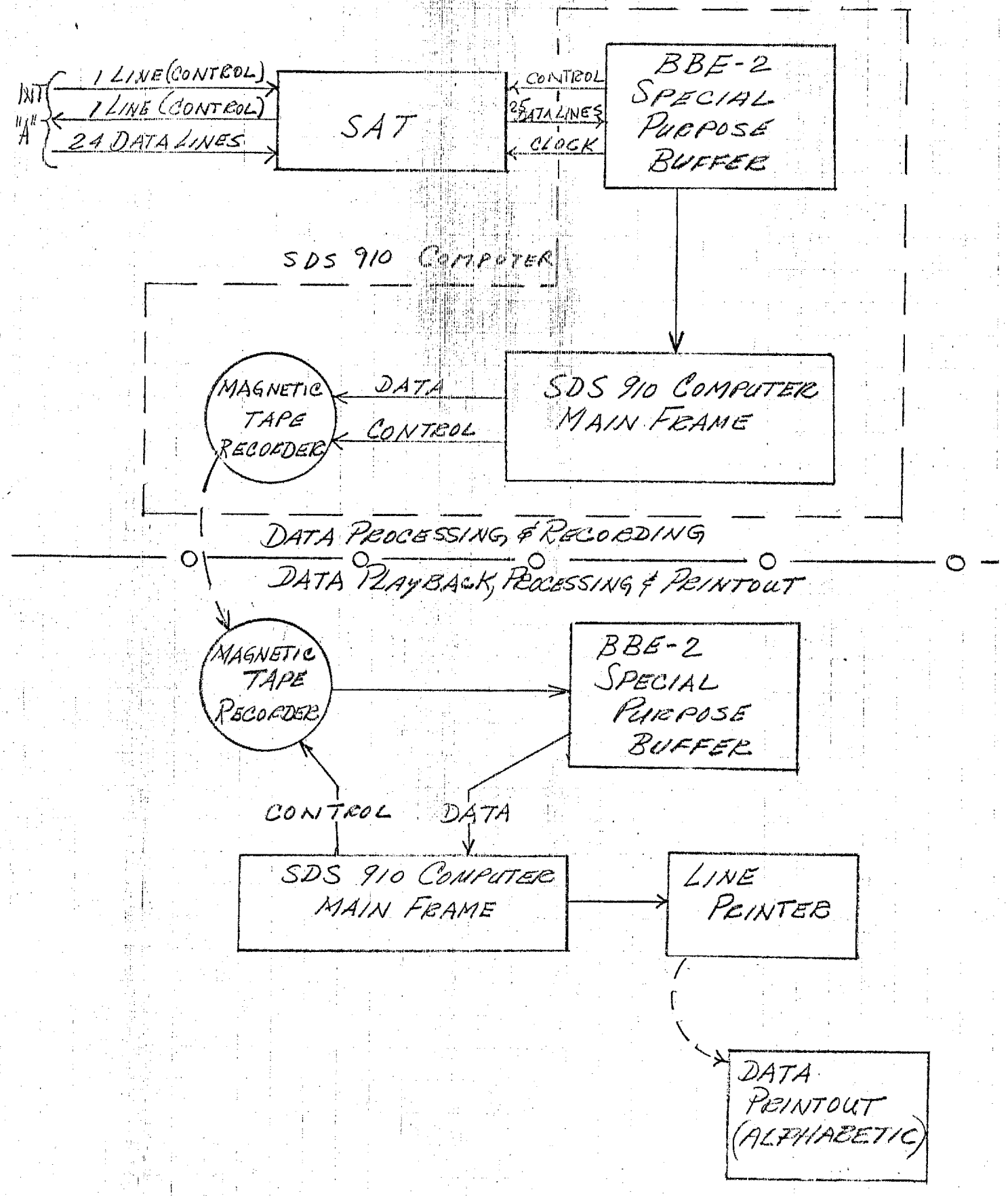


FIG #3
DPOD / SDS-910

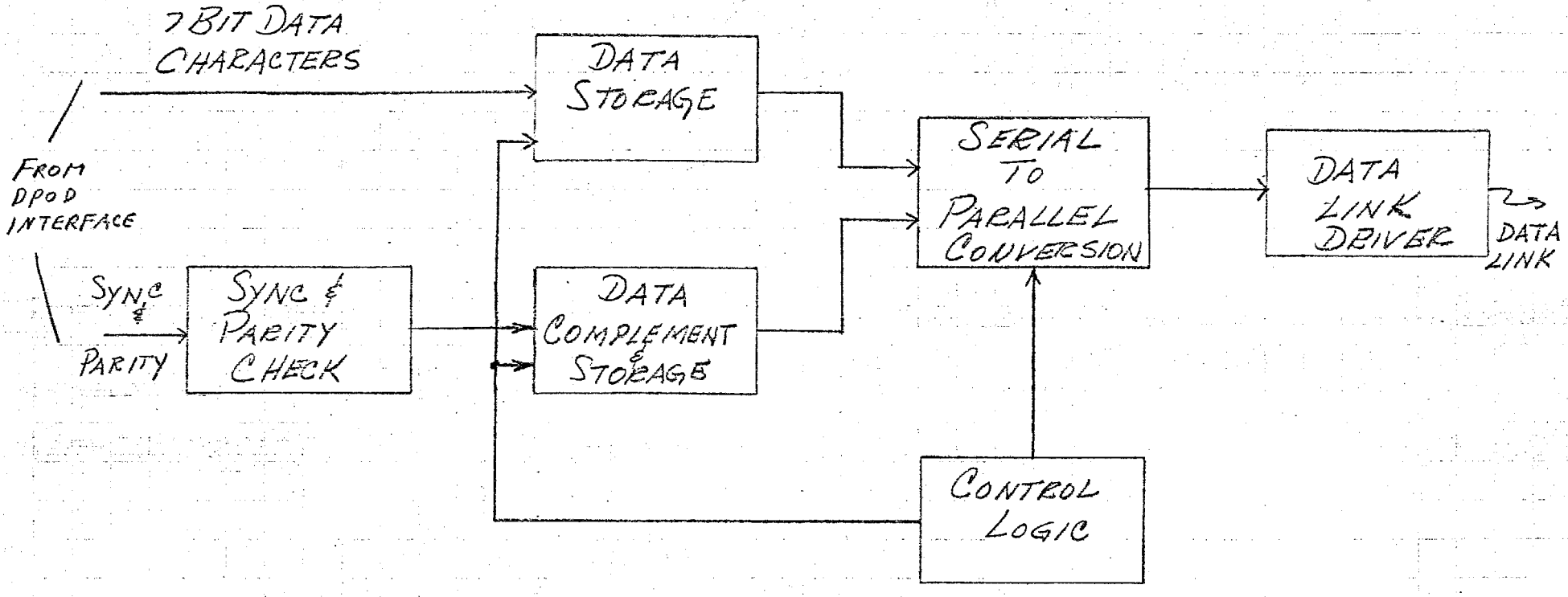


FIG #4
DATA LINK INTERFACE AND DRIVER

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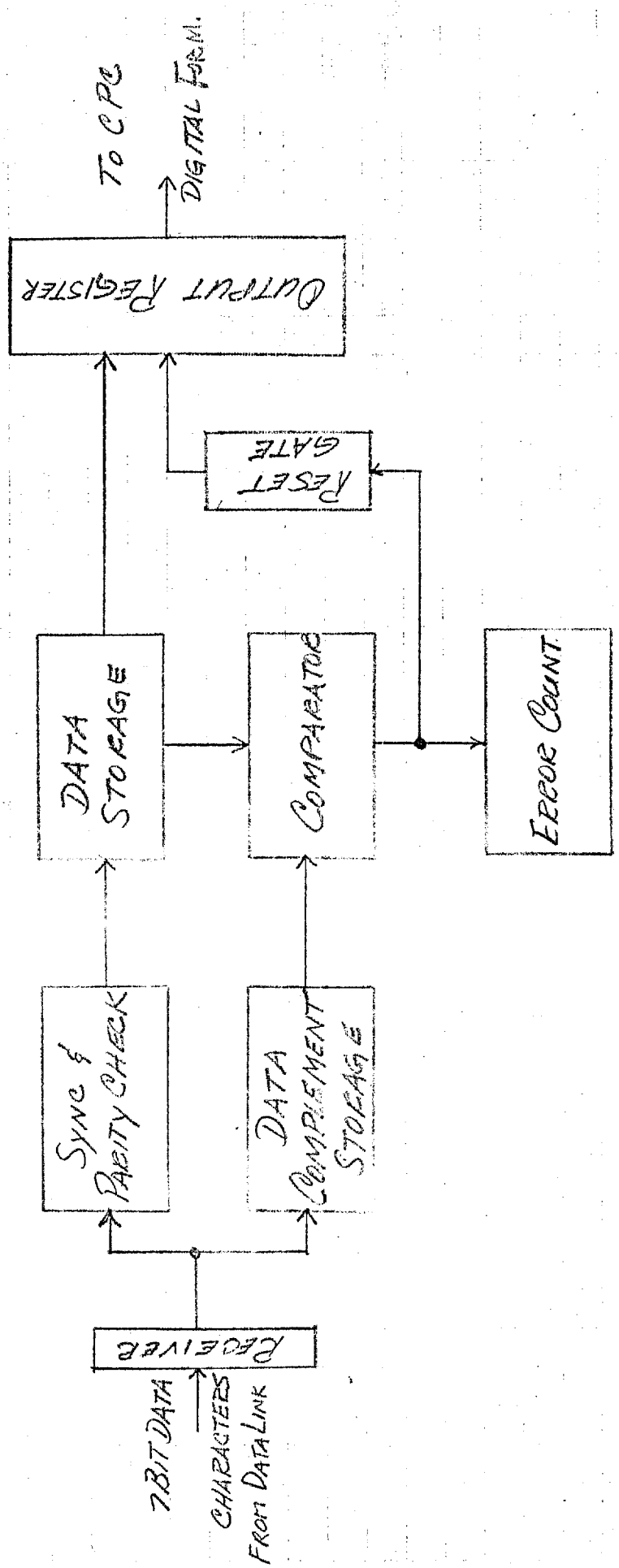

FIG #5

RECEIVER INTERFACE AND ERROR DETECTOR

SPECIAL CONSIDERATIONS

1. It is assumed the Mission Data Reproducing and Digitizing Equipment (MDRDE) will be GFE.

2. Modification and additions will be made to an existing DPOD/SDS 910 system.

3. Delivery of the hardware and programs, integrated into the existing DPOD/SDS 910 will be eight months ARO.

4. The cost of the data link terminal equipment and repeaters for transmission up to a distance of 7 miles is included in this quote. The cost of the coaxial cable and its installation and maintenance is not included.

5. Spares are not included.

6. Workmanship, drawings and handbooks will be to good commercial practice.

7. No Field Service beyond installation and checkout is included.

8. The DPOD/SDS 910 will be available for integration with the hardware and software modifications as required.

BUDGETARY COST(S)

(A) A budgetary cost proposal of $600,000. is offered to meet the fastest practical turn around time within the limits of the equipment described herewith, said time specifically stated to be:

1. A nominal of 21 Min. for the first six (6) reports, and
2. A total of 32 Min. for all fourteen (14) reports.

(B) As an alternate this contractions offers that a budgetary reduction of $60,000. (Total $540,000.) may be offered in the event processing time may be extended as follows:

1. 25.5 Min. for the first six (6) reports, and
2. A total of 41.5 Min for all fourteen (14) reports.

E-C PORTION OF GDR

CENTRAL PROCESSING CENTER (CPC)

J-1987

BUDGET ESTIMATES

29 APRIL 1964

Contents hereof, constituting budgetary cost information and attendant special considerations, are submitted as an interim response to SPO Request for Proposal dated 23 March 1964.

BUDGETARY ESTIMATE FOR CPC & ASSOCIATED ITEMS

Item #	Description	Estimate *
1	Central Processing Center (CPC)	6.1
2 (a)	Spare Parts Provisioning for Item 1	.1
3	Support Equipment - Provided by Procuring Agency	---
4	Support Equipment Spares - Provided by Procuring Agency	---
5 (a)	Preliminary Effort Associated With Engineering Change Proposals (ECP's) and Eng. Studies	.1
6	Data (Handbooks, Drawings and Monthly Progress Reports)	.4
7	Training	.2
8	Program to Perform Full ELINT Processing	.7
9	Integration Coordination	.1
10	Procurement of MPC Computer (CDC 3200)	1.2
11	Mission Planning	.2
	Estimate for above items	9.1

INITIAL ESTIMATE OF RESERVE FOR PRESENTLY UNDEFINED AREAS

2 (b)	Spare Parts for Item 1 (CPC)	.7
5 (b)	Actual Effort Associated With Special Engineering Studies and Engineering Change Proposals (ECP's)	.3
	Initial Estimate for undefined areas	1.0

* Figures reflect dollar amounts in millions

FISCAL YEAR EXPENDITURES

E-C PORTION OF CDR

Item		FY 64	FY 65	FY 66	Total
1	Central Processing Center	.1	5.7	.3	6.1
2 (a)	Spare Parts for Item 1		.1		.1
5 (b)	Prel. Effort Assoc. with Eng. Studies and ECP's)		.1		.1
6	Data (Handbooks, etc.)	.05	.25	.1	.4
7	Training		.1	.1	.2
8	Prog. to Perf. Full ELINT Processing	.1	.5	.1	.7
9	Integration Coordination		.1		.1
10	Procurement of MPC Comp. (CDC 3200)		1.2		1.2
11	Mission Planning		.2		.2
	TOTAL	.25	8.25	.6	9.1
2 (b)	Spare Parts for Item 1 (CPC)		.3	.4	.7
5	Actual Effort Assoc. with Eng. Studies and ECP's		.3		.3
	TOTAL		.6	.4	1.0

SPECIAL CONSIDERATIONS

Item No. 1

Description: Central Processing Center (CPC)

The Central Processing Center will conform to the requirements of this contractor's Detail Specification 1916-SPS-21, said document presently being revised to conform with the agreements reached during the 23 March 1964 conference conducted at the SPO. It is this contractor's intent that a revised and updated copy of Detail Specification 1916-SPS-21 be forwarded for customer review and approval during the week of 4 May 1964.

Item No. 2

Description: Spares for CPC

This contractor has divided this item into two (2) separate areas, specifically:

1. An amount for the provisioning effort attendant to the establishing of spares requirements, same having been incorporated under the Associated Items as "Item 2 (a)", and
2. The actual spares acquisition cost which at this time remains an unknown but for which a reserve has been indicated under "Item 2 (b)".

Note: The reserve indicated under "Item 2 (b)" is intended to provide support for an initial one (1) year period - depletion allowances beyond this point have not been taken into account hereunder.

Item No. 5

Description: Engineering Changes

This contractor has divided this item into two (2) separate areas, specifically:

1. An amount for the preliminary investigation associated with Engineering Changes and Engineering Studies which would be limited to a preliminary definition of the approach that is to be taken and an associated budgetary cost. The aforementioned preliminary investigation and budgetary cost would be of sufficient definition to permit Contracting Agency evaluation and direction along the lines of proceeding with the effort or discontinuing same. These preliminary investigation costs only have been included under Item 5 (a) and,
2. Under Item 5 (b) of the "Reserve for Presently Undefined Areas" this contractor has listed an estimated amount for the compilation of Engineering Change Proposals (ECP's) and accomplishment of Engineering Studies.

Item No. 6

Description: Data

A. Handbooks: All handbooks will be made to good commercial practice and will utilize Cat. I/II Handbook material as much as possible. Commercial Equipment volumes will contain only handbooks on new or modified equipment.

B. Drawings: The proposal submitted hereunder reflects the delivery of one (1) ea. sets of reproducible and reproduction type copies.

C. Progress Reports: The proposal submitted hereunder reflects the submission of Monthly Fiscal and Technical Progress Reports only.

Item No. 7

Description: Training

CPC training will utilize the content, format and method of presentation of the Cat. II MPC courses wherever applicable. Major changes are anticipated in the Software and Operator courses. Length of course preparation time is based on these assumptions.

The budgetary estimate includes the development of all necessary static training aids and classroom handout material. It does not include any simulators or Mobile Training Units (MTU) or exotic teaching devices (closed circuit TV, Teaching Machines, etc). Use of actual CPC equipment on a GFE basis is assumed. Computer rental time for CPC Operator Training is included.

Item No. 8

Description: Program to Perform Full ELINT Processing

Proposal reflects continuation and completion of MPC effort essentially in accordance with present six (6) vehicle program requirements.

Item No. 9

Description: Integration Responsibility

Proposal reflects a level of engineering coordination and liaison essentially consistent with that being experienced under the present six (6) vehicle program.

Item No. 10

Description: Procurement of MPC Computer (CDC 3200)

Budgetary quotation reflects the conversion of the MPC Computer from the present "Rental" status to a "Buy" category.

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Item No. 11

Description: Mission Planning

Proposal reflects compliance with the authority and direction set forth under SPO correspondence dated 15 April 1964.

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CPC

5 October 1964

Reference: Contract AF33(657)-12843

Dear Frank:

The contents hereof are submitted as an amendment to this contractor's prior proposal 1987 J (A) dated 24 July 1964 entitled, "Cost Analysis for Central Processing Center (CPC)", this amendment to encompass the following:

(a) The incorporation of certain additional items that have been directed and/or defined in the period subsequent to 24 July 1964, and

(b) The application of certain Overhead & General and Administrative adjustments to the 1987 J (A) proposal, said adjustments reflecting rates also definitized subsequent to the 24 July 1964 submission.

It is to be noted that the net affect of (a) and (b) above is to increase this contractor's CPC proposal (total estimated cost and fixed fee as applied to firmly defined areas only) as follows:

1987 J (A) dated 24 July 1964 ---	$ 9,757,864.
1987 J (B) as submitted hereunder-	1,357,628.
Proposed Total Contract Amount -	$11,115,492.

In connection with the $1,357,628. proposal amendment (1987J(B)), this contractor is pleased to forward the enclosed individual contract item cost analysis and description(s) attendant to the additional requirements.

In summary it is trusted you will find this contractor's CPC Proposal, offered firm for acceptance through the period ending 30 November 1964, suitable in all respects for Contracting Officer evaluation. In the event additional information is required, please contact either [redacted] or [redacted] STAT STAT

Sincerely yours,

[redacted] STAT

Treasurer

WHD/JM/vr
Encl.

cc: Temp [redacted] STAT

CPC

COST ANALYSIS (AMENDED)

for

CENTRAL PROCESSING CENTER (CPC)

1987 J (B)

Use whole book with this

5 October 1964

1987 J (B) SUMMARY LISTING

of

ADDITIONAL AND/OR ADJUSTED REQUIREMENTS

Description	Cost	
Microfilming of Engineering Drawings	$ 5,850.	Item F
NAV Data Processing - EMR Program Tape Prep.	93,269.	Was Item E - Item E
Support of Flash Reporting	45,116.	Item I
Mission Planning and Preparation (MP^2)	1,444,647.	Was Item Item 13
Revised Provisioning Cost	(287,727.)	Item 2
Open Procurement of Test Equipment in Lieu of GFE	5,854.	Item 12
Pre-Requisite Training Introduction	29,593.	Item 7
Adjustment of O. H. and G & A Rates	(73,694.)	
Estimated Cost	1,262,908.	
Planned Fee	94,720.	
Total Est. Cost - Incl. Fee	$ 1,357,628.	

Requirement: Microfilming of Engineering Drawings

Description: The following shall be provided in fulfillment of this item:

1. 35mm microfilm per Mil-M-9868
   Type I - Silver Halide
   Class 1 - Camera microfilm (negative type)
   Clear line image.

   Note: The quality of microfilm will not be subject to the requirements of Mil-M-9868 - 15 April 1960

2. Microfilm will be mounted on aperture card per Mil-C-9877A
   Type I - Cold seal, pressure sensitive microfilm carrier.

3. Aperture card will be Code Card "A"
   Form DD 1306, per Mil Standard 804A.

4. All spec and source control drawings will be microfilmed and mounted in aperture cards and a vendor deck will be provided.

5. D'L's and Il's will be provided per Mil Standard 804A.

6. All assemblies at the EMR Contractor's level will be submitted on microfilm.

7. All schematics will be submitted on microfilm.

Requirement: Nav Data Processing - EMR Program Tape Preparation

Description: This contractor previously unable to submit firm proposals due to the lack of firm technical information, offers the following definition for each of the above requirements:

NAV DATA PROCESSING - shall consist of mission tape NAV data check, correction and processing for NAV report printout and plot.

EMR PROGRAM TAPE PREPARATION - shall consist of the preparation of program loading tapes for the SCL of the EMR system containing selected alarm data.

Note: Due to the lack of firm scope definition at this time, this contractor is unable to provide firm quotations for the following requirements:

1 - NAV Tape Preparation

2 - Maintenance Data Preparation

3 - Data Interpretation Assistance

It is this contractor's intent that firm proposals for these three (3) requirements will be submitted by 31 December 1964.

Requirement: Support of Flash Reporting

Description: Subsequent to the demonstration of Flash Reporting Capability (31 July 1965) this contractor will provide technical support to the Using Activity in an overall amount of 24 man months (4 men for 6 months).

Note: Above not contemplated at the time of this contractor's prior submittal (24 July 1964) and is being included at this time pursuant to SPO direction.

Requirement: Mission Planning and Preparation (MP^2)

Description: Performance shall be in accordance with the EMR contractor's Work Statement, 1975-W-1 dated 5 October 1964.

Requirement: Revised Provisioning Cost

Description: In the period subsequent to 24 July 1964, a number of firm subcontractor quotations for provisioning documentation have been received. The net affect of these firm quotations has been to reduce the estimated cost proposed by this contractor under 1987 J (A).

Requirement: Open procurement of test equipment in lieu of GFE

Description: As part of this contractor's 24 July 1964 Proposal 1987 J (A) under Exhibit "G", a listing of test equipment required in support of the CPC effort was set forth.

Recent SPO direction has been to isolate from the aforementioned listing those itemspreviously unavailable in Depot inventory to support the DT & E Program (Contract AF33(657)-12278) and submit said unavailable items to the Contracting Officer for open procurement authorization.

This contractor's procurement authorization request was submitted on 4 September 1964 and has received Contracting Officer endorsement.

Requirement: Pre-requisite Training Introduction

Description: Subsequent to submittal of this contractor's 24 July 1964 Proposal 1987 J (A), it has been determined that prior to entry into the formal training course (Item #7) it will be necessary to conduct pre-requisite training. This determination has been reached by an actual assessment of typical using activity personnel who will be enrolled in the formal training course.

The pre-requisite training courses (computer programming and digital techniques respectively) are designed for personnel whose experience in hardware maintenance and/or software computer programming is limited.

ANALYSIS

FILE: 1987J(B)

DATE: 23 September 1964

ITEM NO: SUMMARY PR NO:
CONTRACT:

DESCRIPTION OF ITEM: SUMMARY OF REVISIONS TO ALL ITEMS

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR	
		LABOR CLASS A	LABOR CLASS B	F. E.	
ADMINISTRATIVE (DIRECT)	12,055	38,662			38,662
ENGINEERING	81,460	598,958			598,958
TECHNICIANS	3,250	12,148			12,148
PUBLICATIONS	240	770			770
DESIGN AND DRAFTING	2,700	9,809			9,809
SHOP					
ELECTRICAL ASSEMBLY					
INSPECTION					
SPARES DATA PREPARATION					
PACKAGING AND SHIPPING					
FIELD ENGINEERING	6,400		3,241	24,718	27,959
(1) TOTAL DIRECT LABOR		660,347	3,241	$24,718	688,306

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ 647,270

82.5 % OF DIRECT LABOR CLASS (B) $ 2,674

50 % of Field Engineering $ 12,360

(2) TOTAL OVERHEAD $ 662,304

RAW MATERIAL AND PURCHASED PARTS	15,035
SUBCONTRACTING	(236,437)
TRAVEL AND SUBSISTENCE	58,210
OVERTIME PREMIUM	5,738
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	3,500

(3) DIRECT CHARGES (OTHER THAN LABOR) $ (153,954)

(4) TOTAL OF (1) AND (2) AND (3) $ 1,196,656

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ 66,252

(6) ESTIMATED COST, (4) + (5) $ 1,262,908

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 94,720

GRAND TOTAL, (6) + (7) $ 1,357,628

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: I
PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISION OF WSI #1

DIRECT LABOR CLASS	TOTAL HOURS	COSTS LABOR CLASS A [illegible]		TOTAL LABOR
			Field Eng.	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING	4,800		19,855	19,855
(1) TOTAL DIRECT LABOR			19,855	$ 19,855

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (14,508)
% OF DIRECT LABOR CLASS (B) $
50% of Field Engineering 9,928
(2) TOTAL OVERHEAD $ (4,580)

RAW MATERIAL AND PURCHASED PARTS		
SUBCONTRACTING		
TRAVEL AND SUBSISTENCE	10,720	
OVERTIME PREMIUM	888	
PACKAGING AND SHIPPING		
OTHER DIRECT CHARGES		
(3) DIRECT CHARGES (OTHER THAN LABOR)		$ 11,608
(4) TOTAL OF (1) AND (2) AND (3)		$ 26,883
(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4)		$ (24,508)
(6) ESTIMATED COST, (4) + (5)		$ 2,375
(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6)		$ 178
GRAND TOTAL, (6) + (7)		$ 2,553

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 2. PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI #2

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (264)
% OF DIRECT LABOR CLASS (B) $

(2) TOTAL OVERHEAD $ (264)

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	(263,970)
TRAVEL AND SUBSISTENCE	
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ (263,970)

(4) TOTAL OF (1) AND (2) AND (3) $ (264,234)

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (25,768)

(6) ESTIMATED COST, (4) + (5) $ (290,002)

(7) PLANNED PROFIT OR FEE 7.5% OF ESTIMATED COST, (6) $ (21,750)

GRAND TOTAL, (6) + (7) $ (311,752)

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 5. PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISION TO WSI #5

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (1169)
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ (1,169)

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ (1,169)

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (584)

(6) ESTIMATED COST, (4) + (5) $ (1,753)

(7) PLANNED PROFIT OR FEE % OF ESTIMATED COST, (6) $ (131)

GRAND TOTAL, (6) + (7) $ (1,884)

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 6. PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI #6

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING	980	2,387		2,387
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR		2,387		$ 2,387

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ 1,114
% OF DIRECT LABOR CLASS (B) $

(2) TOTAL OVERHEAD $ 1,114

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	533
TRAVEL AND SUBSISTENCE	
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 533

(4) TOTAL OF (1) AND (2) AND (3) $ 4,034

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (199)

(6) ESTIMATED COST, (4) + (5) $ 3,835

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 288

GRAND TOTAL, (6) + (7) $ 4,123

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 7.
PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISION TO WSI 7

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		F. Eng.	TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B		
ADMINISTRATIVE (DIRECT)	480	922			922
ENGINEERING	160	1,131			1,131
TECHNICIANS					
PUBLICATIONS	240	770			770
DESIGN AND DRAFTING	320	1,046			1,046
SHOP					
ELECTRICAL ASSEMBLY					
INSPECTION					
SPARES DATA PREPARATION					
PACKAGING AND SHIPPING					
FIELD ENGINEERING	1,600		3,241	4,863	8,104
(1) TOTAL DIRECT LABOR		3,869	3,241	$ 4,863	11,973

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ 2,701
82.5 % OF DIRECT LABOR CLASS (B) $ 2,674
50 % of F. Eng. 2,432
(2) TOTAL OVERHEAD $ 7,807

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	2,605
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	3,500

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 6,105

(4) TOTAL OF (1) AND (2) AND (3) $ 25,885

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ 1,674

(6) ESTIMATED COST, (4) + (5) $ 27,559

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 2,067

GRAND TOTAL, (6) + (7) $ 29,626

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 8.
PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI #8

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	175	413		413
ENGINEERING	6,300	39,566		39,566
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR		39,979		$ 39,979

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ 32,758
% OF DIRECT LABOR CLASS (B) $

(2) TOTAL OVERHEAD $ 32,758

RAW MATERIAL AND PURCHASED PARTS	
SUBCONTRACTING	
TRAVEL AND SUBSISTENCE	4,610
OVERTIME PREMIUM	
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 4,610

(4) TOTAL OF (1) AND (2) AND (3) $ 77,347

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ 3,255

(6) ESTIMATED COST, (4) + (5) $ 80,602

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 6,045

GRAND TOTAL, (6) + (7) $ 86,647

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 9.
PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI 9

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (173)
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ (173)

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ (173)

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (86)

(6) ESTIMATED COST, (4) + (5) $ (259)

(7) PLANNED PROFIT OR FEE % OF ESTIMATED COST, (6) $ (19)

GRAND TOTAL, (6) + (7) $ (278)

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 10. PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI 10

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ _____
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ _____

RAW MATERIAL AND PURCHASED PARTS _____
SUBCONTRACTING _____
TRAVEL AND SUBSISTENCE _____
OVERTIME PREMIUM _____
PACKAGING AND SHIPPING _____
OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ _____

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (5,496)

(6) ESTIMATED COST, (4) + (5) $ (5,496)

(7) PLANNED PROFIT OR FEE 7.5% OF ESTIMATED COST, (6) $ (412)

GRAND TOTAL, (6) + (7) $ (5,908)

ANALYSIS

FILE: 1987 J(B)

DATE: 23 September 1964

ITEM NO: 11. PR NO:

CONTRACT:

DESCRIPTION OF ITEM: REVISIONS TO WSI 11

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS				
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR				$

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (1,507)

% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ (1,507)

RAW MATERIAL AND PURCHASED PARTS _____

SUBCONTRACTING _____

TRAVEL AND SUBSISTENCE _____

OVERTIME PREMIUM _____

PACKAGING AND SHIPPING _____

OTHER DIRECT CHARGES _____

(3) DIRECT CHARGES (OTHER THAN LABOR) $ _____

(4) TOTAL OF (1) AND (2) AND (3) $ (1,507)

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (887)

(6) ESTIMATED COST, (4) + (5) $ (2,394)

(7) PLANNED PROFIT OR FEE % OF ESTIMATED COST, (6) $ (180)

GRAND TOTAL, (6) + (7) $ (2,574)

ANALYSIS

FILE: 1987 J(B)
DATE: 23 September 1964

ITEM NO: 12.
PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISIONS TO WSI 12

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)				
ENGINEERING				
TECHNICIANS	50	166		166
PUBLICATIONS				
DESIGN AND DRAFTING				
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR		166		$ 166

OVERHEAD: % OF DIRECT LABOR CLASS (A) $ (975)
% OF DIRECT LABOR CLASS (B) $

(2) TOTAL OVERHEAD $ (975)

RAW MATERIAL AND PURCHASED PARTS 5,035
SUBCONTRACTING
TRAVEL AND SUBSISTENCE
OVERTIME PREMIUM
PACKAGING AND SHIPPING
OTHER DIRECT CHARGES

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 5,035

(4) TOTAL OF (1) AND (2) AND (3) $ 4,226

(5) GENERAL AND ADMINISTRATIVE EXPENSE, % OF (4) $ (432)

(6) ESTIMATED COST, (4) + (5) $ 3,794

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 285

GRAND TOTAL, (6) + (7) $ 4,079

ANALYSIS

FILE: 1987J(B)
DATE: 23 September 1964

ITEM NO: 13. PR NO:
CONTRACT:
DESCRIPTION OF ITEM: REVISION TO WSI 13 (Addition) - MP^2

DIRECT LABOR CLASS	TOTAL HOURS	COSTS		TOTAL LABOR
		LABOR CLASS A	LABOR CLASS B	
ADMINISTRATIVE (DIRECT)	11,400	37,327		37,327
ENGINEERING	75,000	558,261		558,261
TECHNICIANS	3,200	11,982		11,982
PUBLICATIONS				
DESIGN AND DRAFTING	1,400	6,376		6,376
SHOP				
ELECTRICAL ASSEMBLY				
INSPECTION				
SPARES DATA PREPARATION				
PACKAGING AND SHIPPING				
FIELD ENGINEERING				
(1) TOTAL DIRECT LABOR		613,946		$ 613,946

OVERHEAD 102.5% OF DIRECT LABOR CLASS (A) $ 629,293
% OF DIRECT LABOR CLASS (B) $ _____

(2) TOTAL OVERHEAD $ 629,293

RAW MATERIAL AND PURCHASED PARTS	10,000
SUBCONTRACTING	27,000
TRAVEL AND SUBSISTENCE	40,275
OVERTIME PREMIUM	4,850
PACKAGING AND SHIPPING	
OTHER DIRECT CHARGES	

(3) DIRECT CHARGES (OTHER THAN LABOR) $ 82,125

(4) TOTAL OF (1) AND (2) AND (3) $ 1,325,364

(5) GENERAL AND ADMINISTRATIVE EXPENSE, 9.0 % OF (4) $ 119,283

(6) ESTIMATED COST, (4) + (5) $ 1,444,647

(7) PLANNED PROFIT OR FEE 7.5 % OF ESTIMATED COST, (6) $ 108,349

GRAND TOTAL, (6) + (7) $ 1,552,996